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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/582,055	05/04/2007	Antonio Giacomo Paolini	06-419	1914
20/306 7590 07/07/2010 MCDONNELL BOEHNNEN HULBERT & BERGHOFF LLP 300 S. WACKER DRIVE 32ND FLOOR CHICAGO, IL 60606				
			EXAMINER PORTER, JR, GARY A	
			ART UNIT 3766	PAPER NUMBER
			MAIL DATE 07/07/2010	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/582,055

## Applicant(s)

PAOLINI ET AL.

## Examiner

GARY A. PORTER, JR

## Art Unit

3766

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 7-13, 16, 17 and 19-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 10-13, 16, 17, 22-27, 30 and 31 is/are rejected.
- 7) ☒ Claim(s) 7-9, 19-21, 28 and 29 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/26/2010 has been entered.

### ***Claim Objections***

2. Claim 27 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. The limitation "to apply temporal adjustment to the activation time of stimulation device derived from the amplitudes of stimuli to be applied by proximate stimulation devices" has already been recited in independent Claim 16 in the last paragraph of the claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Both claims recite the same function the processor must perform.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3, 10, 13, 16, 22, 24-27 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by McDermott et al. (5,597,380) (cited previously).

5. Regarding Claims 1, 2, 10 and 30, McDermott teaches an auditory prosthesis, i.e. cochlear implant (Abstract) with a linear array of electrodes 1 (Fig. 1) that determines a base strategy and stimulation time for 16 channels of spectral information. McDermott further discloses that each of the 16 spectral channels is assigned to a unique electrode but only six electrodes are stimulated based on the determination of the six largest spectral components (col. 4, lines 39-67). Specifically, the six stimuli are arranged from largest amplitude to smallest amplitude and then applied in sequence every 4 ms to a selected unique electrode of the electrode array (col. 4, line 55—col. 5, line 2).

6. In regards to Claims 3 and 25, the claim limitation "implantable" merely requires the system to be capable of being implanted into the brain. Due to the small size of cochlear implants, these devices are also capable of being implanted into the brain. This limitation serves only as a size constraint and therefore is anticipated by McDermott.

7. With regards to Claims 13, 16 and 22, McDermott teaches an auditory prosthesis including an array of electrodes 1, a stimulator unit 3 and a processor 7 that determines a base strategy and stimulation time for 16 channels of spectral information. McDermott further discloses that each of the 16 spectral channels is assigned to a unique electrode but only six electrodes are stimulated based on the determination of the six largest spectral components (col. 4, lines 39-67)). Specifically, the stimuli are arranged by the processor from largest amplitude to smallest amplitude and then applied in sequence every 4 ms to a unique electrode of the electrode array (col. 4, line 55—col. 5, line 2).
8. Regarding Claim 24, McDermott teaches the implant is a cochlear implant (Abstract).
9. In regards to Claims 26 and 27, McDermott teaches that the processor applies the temporal adjustment of 4 ms after the stimuli are ordered by amplitude (col. 4, line 55 - col. 5, line 2).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 5 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over McDermott et al. (5,597,380) in view of Faltys et al. (2001/0031909) (both cited previously). McDermott discloses all of the claimed invention except for applying a temporal adjustment to stimulation in response to a weighted sum of proximate stimuli. However, Faltys teaches obtaining weighted sums of proximate stimulation groups, comparing these sums to a selected group and subsequently delaying the stimulation of the current group if its weighted sum is less than the proximate groups for the purpose of assuring the most relevant stimuli are applied to the user (Sections [0084-0085]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in the McDermott reference to include applying temporal adjustments to stimulation based on weighted sums of proximate stimuli, as taught and suggested by Faltys, for the purpose of assuring the most relevant stimuli are applied to the user.

13. Additionally, the Examiner notes that it has been held that the functional "whereby" statement does not define any structure and accordingly can not serve to distinguish. *In re Mason*, 114 USPQ 127, 44 CCPA 937 (1957).

14. Claims 11, 12, 23 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDermott et al. (5,597,380) in view of Gibson (2004/0078057) (cited previously). McDermott discloses all of the claimed invention except for including a drug delivery system in the cochlear implant. However, Gibson teaches incorporating a drug reservoir and pump into an implanted cochlear stimulator for the purpose of promoting healing and/or more efficient neural stimulation while preventing the formation of substantial scar tissue in the cochlea (Abstract; Sections [0032, 0090, 0095]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device in the McDermott reference to include a pharmaceutical drug delivery means, as taught and suggested by Gibson, for the purpose of promoting healing and/or more efficient neural stimulation while preventing the formation of substantial scar tissue in the cochlea.

***Allowable Subject Matter***

15. Claims 7, 8, 9, 19, 20, 21, 28 and 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

16. Applicant's arguments filed 4/26/2010 have been fully considered but they are not persuasive.

17. Applicant argues at page 10 under the Remarks "McDermott et al. only teach the claimed 'base strategy', and do not teach the use of a separate temporal adjustment after application of that base strategy." The Examiner respectfully disagrees. McDermott discloses a "base strategy" of reducing 32 discrete spectral samples to 16 spectral estimates and allocating each estimate to a unique electrode position in a tonotopic arrangement. McDermott then discloses a separate operation for further reducing these 16 sample to six samples that are then used to stimulate 16 electrodes (col. 4, lines 39-67).

18. Applicant further argues that McDermott's amplitude based ordering is not a 'temporal adjustment.' The Examiner respectfully disagrees. The term 'temporal adjustment' only conveys that the stimulation is broadly adjusted in time. Given this interpretation, the adjustment provided by McDermott meets the claim limitation since the activations of the six electrodes are determined by the six highest amplitude samples. In other words, the order in time which the electrodes are activated is based on the amplitudes of the samples allocated to them. (col. 4, lines 39-67).

19. Applicant argues at page 11 under the Remarks "Faltys appears to calculate a weighted sum of the sound energy of a group of electrodes and compares that with the weighted sum of other groups of electrodes and then orders them. This is different than the claimed invention where a single stimulation is compared to the weighted sum of a group of electrodes not including itself." The Examiner respectfully disagrees. Applicant's claim language recites "stimuli to be applied by the particular device." Furthermore in Claims 1, 5, 13 and 17, "stimulation devices" and not singular electrodes



are recited. Applicant has not specified in the claim language that these stimulation devices are singular electrodes. Given its broadest reasonable interpretation, a "stimulation device" can consist of a group of electrodes and not a singular electrode as implied in Applicant's argument. Additionally, Faltys discloses creating weighted sums of stimulation groups, comparing them to one another and subsequently re-ordering the stimulation based on the comparison (Section [0085]). As can be seen in Fig. 1-2 of Faltys, the electrodes of the implant are linearly organized. Faltys further discloses that the weighted stimulation groups are clusters of these electrode contacts (Section [0072]). Since there are multiple groups of these linearly spaced electrodes, there will indeed exist groups that are proximate, i.e. near, one another. Therefore, comparing a weighted sum of one group of electrodes to another group of electrodes on the same implant meets the claim limitation of comparing "sum of the amplitudes of proximate stimuli" to "the stimuli to be applied by the particular device." The term 'proximate' only requires that the stimuli or devices applying the stimuli are near one another. Since the groups of electrodes are on a cochlear implant and cochlear implants are relatively small, the electrodes on the device can be considered proximate or near one another. Applicant has not defined any specific spatial relationship of one stimulation device to another.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY A. PORTER, JR whose telephone number is

(571)270-5419. The examiner can normally be reached on Monday - Thursday, 7AM - 4PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Layno can be reached on (571)272-4949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. A. P./  
Examiner, Art Unit 3766

/Carl H. Layno/  
Supervisory Patent Examiner, Art  
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